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DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY 11553			CHANG, EDITH M	
			ART UNIT	PAPER NUMBER
			2637	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,553

Applicant(s)

LEE ET AL.

Examiner

Edith M. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24, 27-31 and 34-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-17, 23, 24, 30 and 31 is/are allowed.
- 6) ☒ Claim(s) 1-13, 18-22, 27-29 and 34-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed December 8, 2005, have been fully considered but they are not persuasive.

Regarding claims 9, 10, 18 and 19, applicants argue that Kuchi et al. is silent as to its spreading process, and Whinnett et al. spreads four signals using two orthogonal codes.

In FIG.1, Kuchi et al. discloses the elements 110 & 112 of the spreading, wherein a first symbol pattern S_1 & S_2 is spreaded with the orthogonal code in 110 and symbols S_1 and S_2 are transmitted on antenna 114 and antenna 116, (column 4, lines 20-21); and a second symbol pattern S_{d1} & S_{d2} is spreaded with the orthogonal code in 112 (symbols S_{d1} and S_{d2} are transmitted on antenna 118 and antenna 120 (column 4, lines 30-32). It is well known in the art that the spread spectrum technique using multipliers to spread signals with orthogonal codes in the forward link, Whinnett et al. teaches the multipliers connected to antennas to provide spreading signals. As Kuchi et al. having four spreading streams transmitted on four antennas, it would have been obvious to one of ordinary skill in the art to have two multipliers connected to antennas 114 & 116 to provide the spreading symbols S_1 & S_2 and another two multipliers connected to antennas 118 & 120 to provide the spreading symbols S_{d1} & S_{d2} .

The claims 2, 12, 22 and 29 were examined and are listed in the following.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 5-6, lines 7-8, lines 11-12, line 15, lines 16-17 and lines 20-21: the limitation "after transmission power control" does not clearly indicate what does the "transmission power control" and what are/is after transmission power control in the apparatus claim of a UTRAN transmitter.

Claim 2, line 2: "the symbol pattern" lacks antecedent basis.

Claim 4, line 11: "a second symbol pattern" does not clearly indicate that it is another second symbol pattern different than "a second symbol pattern" recited in the line 9 of claim 4 or it should be the same.

Claims 3 and 5-8 are dependent on the rejected claims 1 and 4 respectively.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 35 and 36 are rejected under 35 U.S.C. 102(e) as being unpatentable by Thomas et al. (US 6,647,078 B1).

Regarding **claims 35 & 36**, in FIG.2, Thomas et al. discloses a User Equipment receiver 200 comprising:

A receiving unit 201 to receive signals on a code channel in a wireless communication system (column 3, lines 45-50);

A channel estimator 208 for estimating channel using the signal from the receiving unit (column 6, lines 7-8); and

A soft decoder (206) for generating detection value (213) using two symbols from among the estimated channels (210) (column 6, lines 20-22).

As Thomas et al. using the receiving unit to receive the spread spectrum signals on the code channel, it would have been obvious to one of ordinary skill in the art to have a despreader in the receiving unit to generate a despread signal using an orthogonal code of the received signal on the code channel that is well-known in the art.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuchi et al. (US 6,542,556 B1).

Regarding **claim 34**, in FIG.1 or FIG.4, Kuchi et al. discloses a UTRAN transmitter of transmit diversity with at least four antennas (414, 416, 418 & 420) comprising the means (space time spreading blocks 406 & 408, the filter and modulate 411 & 412) for transmitting the CDMA signals (column 7, line 38-41). Since Kuchi et al.'s transmitter implements the CDMA technique, it would have been obvious to one of ordinary skill in the art to have the CDMA signals comprising pilot signals that at least two same pilot signals from block 106 or 406 are transmitted from at least two antennas 114 & 116 (column 4, lines 20-21) or 414 & 416 (column 4, lines 30-32).

7. Claims 9-10 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuchi et al. (US 6,542,556 B1) in view of Whinnett et al. (US 6,317,411 B1).

Regarding **claims 9 & 18**, in FIG.1, Kuchi et al. discloses a transmitter having four antennas 114, 116, 118 and 120, the transmitter comprises spread, filter and modulate blocks (110 & 112) connected to four antennas to transmit a first symbol pattern (S1 & S2) from the transform block 106 spreaded with the same spread code in block 110 and the spreaded S1 and spreaded S2 transmitted on antenna 114 and antenna 116 respectively (column 4, lines 20-22 '556); the same as the second symbol pattern Sd1 & Sd2 from the transform block 108, the spreaded Sd1 and spreaded Sd2

are transmitted on antenna 118 and antenna 120 respectively (column 4, lines 30-32 '556) .

However, Kuchi et al. does not explicitly specify the well-know multiplier used for spreading the symbols/signals in the CDMA technique. Whinnett et al. teaches the multipliers used to spread symbols in FIG.9, wherein two spreaders 92 to spread a first symbol pattern $S_1S_1S_2S_2$ (or $-S_2-S_2S_1S_1$) and two spreaders 94 to spread a second symbol patterns $S_3S_3S_4S_4$ (or $-S_4-S_4S_3S_3$), and each multiplier connected to one of the four antennas A1 to A4 (column 8, lines 20-23 '411). As both Kuchi et al.'s and Whinnett et al.'s transmitter provides spreaders to spread two symbol patterns for transmitting over four antennas respectively, at the time of the invention was made, it would have been obvious to one of ordinary skill in the art to have the well-known multipliers taught by Whinnett et al. in the Kuchi et al.'s spread, filter and modulate blocks (110 & 112 FIG.1 '556) that one multiplier is connected to one of the four antennas to provide the spreading signals to transmit, since spreading the symbols/signals using the multiplier is well known in the wireless CDMA technique, and for the purpose of providing antenna data stream (column 10, lines 8-9 '41 1) ready for transmitting in a space-time transmit diversity.

Regarding **claims 10 & 19**, Kuchi et al. disclose the symbol pattern is a data symbol pattern (column 3, line 66-column 4 line 5).

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

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unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-3, 11-12, 13, 20-21 and 27-28 are rejected under the judicially created doctrine of double patenting over claims 1, 3, 7, 8, 9, 17, 18, 19 and 20 of U. S. Patent No. 6,690,712 B2 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

Claim 1, the Claim 1 of the instance application and the claim 1 of US Pat 6,690,712 B2 are drawn to identical subject matter, except the phrase "after transmission power control". In the UTRAN, the spreading/dispersing is performed after the previous transmission power control and before the next transmission control, hence, they claim the same invention.

Claim 3, the dependent claim 3 of the instance application is "wherein the symbol *pattern* is one of a pilot symbol pattern and a data symbol pattern", and the dependent claim 3 of US Pat. 6,690,712 B2 is "wherein *the symbol patterns* are one of pilot symbol patterns and data symbol patterns". Whether it is the symbol pattern or the symbol patterns, the independent claim 1 of the instance application and the independent claim 1 of the U.S. Pat. 6,690,712 B2 comprise both symbol pattern and symbol patterns, therefor, the Claim 3 of the instance application and the claim 3 of US Pat. 6,690,712 B2 are drawn to same subject matter.

Claim 11, the Claim 11 of the instance application is the method claims of the apparatus claim 1, and the claim 7 of US Pat. 6,690,712 B2 is the method claim of the apparatus claim 1 ('712) are drawn to the same subject matter, hence, they claim the same invention.

Claims 2 & 12, the claim 2 of the instance application is an apparatus claim of a transmitter recited in the claim 1, and the claim 12 of the instance application is a method claim of the transmitter recited in the claim 11. The dependent claims 2 and 12 of the instance application with the further limitation "a gain constant" multiplied by symbol patterns in the transmitting signals performed by the transmission control are disclosed in FIG.3;

The claim 3 and claim 9 of US Pat. 6,690,712 B2 are an apparatus claim of a transmitter and a method claim of the transmitter respectively. Beside claiming the same subject matter as the dependent claims 1 and 11 of the independent claims 2 and 12 of the instance application, the claim 3 and claim 9 of US Pat. 6,690,712 B2 have the

limitation "a gain constant" multiplied by symbol patterns in the transmitting signals as disclosed in FIG.3 of the instance application.

Hence, the claims 2 and 12 of the instance application and the claims 3 and 9 of the US Pat. 6,690,712 B2 are drawn to the same subject matter, therefore, they claim the same invention.

Claim 13, the dependent claim 13 of the instance application is "wherein *the symbol pattern* is one of a pilot symbol pattern and a data symbol pattern", and the dependent claim 8 of US Pat. 6,690,712 B2 is "wherein *the symbol patterns* are one of pilot symbol patterns and data symbol patterns". Whether it is the symbol pattern or the symbol patterns, the independent claim 11 of the instance application and the independent claim 7 of the U.S. Pat. 6,690,712 B2 comprise both symbol pattern and symbol patterns, therefor, the Claim 13 of the instance application and the claim 8 of US Pat. 6,690,712 B2 are drawn to same subject matter.

Claim 20, the claim 20 of the instance application is discloses in the FIG.6 and inherently receiving transmitted signals descried in the preamble of the claim 19 and disclosed in the FIG.4 of US Pat. ('712), the receiving transmitted signals are provided by the four antennas disclosed in FIG.3 of the instance application (the specification, page 19 lines 7-8). The reception power-controlled signal of the despread signal used in the adders of the instance application is the same as the despread signal used in the claim 17 of the paten ('712), since the reception power-controlled signal can be the despread signal or a part of the despread signal in generating estimating channel signals. Therefore, these two inventions are drawn to same subject matter.

Claim 21, the dependent claim 21 of the instance application is "wherein *the symbol pattern* is one of a pilot symbol pattern and a data symbol pattern", and the dependent claim 18 of US Pat. 6,690,712 B2 is "wherein *the symbol patterns* are one of pilot symbol patterns and data symbol patterns". Whether it is the symbol pattern or the symbol patterns, the independent claim 21 of the instance application and the independent claim 17 of the U.S. Pat. 6,690,712 B2 comprise both symbol pattern and symbol patterns, therefore, the Claim 21 of the instance application and the claim 18 of US Pat. 6,690,712 B2 are drawn to same subject matter.

Claim 27, the claim 27 is the method claim of the apparatus claim 20 discloses in the FIG.6 of the instance application. Before despreading the received signals, the received signals have been received in the user equipment (UE), hence the claim 27 of the instance application inherently comprises the step of receiving transmitted signals as recited in the claim 19 of US Pat. 6,690,712 B2 (column 18, lines 41-63) in order to perform the despreading step. The despreading step is the generating step of the patent ('712); and the estimating step of using the reception power-controlled signal of the despread signal of the instance application is the same as using despread signal recited in the patent ('712), since the reception power-controlled signal can be the despread signal or a part of the despread signal in estimating channel signals.

The transmitter that transmits the signals to the receiver of FIG.6 is disclosed in FIG.3 of the instance application (the specification, page 19 lines 7-8) as recited in the claim 19 of the patent (column 18, lines 41-63). The claim 27 is disclosed in the

FIG.6 of the instance application, and the claim 19 of the patent is disclosed in the FIG.4 of the patent. These two figures are the same with same elements and structures. Therefore, these two inventions are drawn to same subject matter.

Claim 28, the dependent claim 28 of the instance application is "wherein *the symbol pattern* is one of a pilot symbol pattern and a data symbol pattern", and the dependent claim 20 of US Pat. 6,690,712 B2 is "wherein *the symbol patterns* are one of pilot symbol patterns and data symbol patterns". Whether it is the symbol pattern or the symbol patterns, the independent claim 27 of the instance application and the independent claim 19 of the U.S. Pat. 6,690,712 B2 comprise both symbol pattern and symbol patterns, therefor, the Claim 28 of the instance application and the claim 20 of US Pat. 6,690,712 B2 are drawn to same subject matter.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

10. Claims 22 and 29 rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17 and 19 of U.S. Patent No. 6,690,712 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims 22 and claim 29 of the instance application are a dependent claim of the independent apparatus claim 20 of a

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receiver and a dependent claim of the independent method claim 27 of the receiver respectively with a further limitation "a reciprocal of a gain constant" to recover the transmitted signals with the gain constant, wherein the independent claims 20 and 27 of the instance application are claiming common subject matter of the claims 17 and 19 of the U.S. Patent No. 6,690,712 B2.

The further limitation of the claims 22 and 29 of the instance application is inherently provided as a UE receiver or a mobile station of the claim 17 of the US Pat. 6,690,712 B2, receives signals transmitted from a UTRAN transmitter with transmission power control that the UTRAN transmitter provides one cell (having the same cell radius) for the UE receiver or the mobile station receiving the transmission control by adjusting the gain constant in the cell as recited in the claims.

Hence, the claims 22 and 29 of the instance application and the claims 17 and 19 of U.S. Patent No. 6,690,712 B2 are drawn to same subject matter.

Allowable Subject Matter

11. Claims 14-17, 23-24 and 30-31 are allowed.
12. Claims 4-8 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
13. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest, alone or in a combination, among other things, at least a UTRAN transmitter having at least four antennas, as a whole, the

combination of elements and features, which includes the eight adders connected to one to eight antennas respectively, the first adder adds a first and a second spread signals, the second adder adds the first spreading signal and a third spread signal, the third adder adds a forth spread signal and a fifth spread signal, a fourth adder adds the fourth spread signal and a sixth spread signal, a fifth adder adds a seventh spread signal and a eighth spread signal, a sixth adder adds the seventh spread signal and a ninth spread signal, a seventh adder adds a tenth spread signal and a eleventh spread signal, and a eighth adder adds the tenth signal and a twelfth spread signal as recited in the claims.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rabaeijs et al. describes a receiver with multiple antennas to receive CDMA signals.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

16. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
February 9, 2006


KHAI TRAN
PRIMARY EXAMINER